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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,152	08/16/2001	Christophe Boyer	PET-1946	1470

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EXAMINER

LEUNG, JENNIFER A

ART UNIT PAPER NUMBER

1764

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,152

Applicant(s)

BOYER ET AL.

Examiner

Jennifer A. Leung

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,17-19,21-23,25-27 and 30 is/are pending in the application.
- 4a) Of the above claim(s) 23 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,17,19,21,22 and 26 is/are allowed.
- 6) ☒ Claim(s) 18,25,27 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,17-19,21-23,25-27 and 30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendment submitted on May 23, 2006 has been received and carefully considered. Claim 23 is withdrawn from consideration. Claims 2-16, 20, 24, 28 and 29 are cancelled. Claims 1, 17-19, 21, 22, 25-27 and 30 are under consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, because claim 18 depends from cancelled claim 24.
3. Claims 25, 27 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 25, it is unclear as to the structural limitation applicant is attempting to recite by the addition of "means for circulating liquid and gas phases through the granular bed and beds in a co-current descending manner" (lines 9-10), because the preamble and the body of the claim is generally directed towards a "device for injecting a secondary gas", and it is noted from the specification and drawings that the "means for circulating liquid and gas phases" is not considered part said device. Furthermore, it is unclear as to whether Applicant is attempting to recite the "granular bed or beds" as part of the claimed apparatus, because the bed(s) are merely set forth in the intended use clause of the preamble.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 25, 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pappas et al. (US 3,091,586) in view of Billingham et al. (EP 0 782 877).

Regarding claims 25 and 30, Pappas et al. (see figure) discloses a device comprising: a chamber (i.e., an H₂ treat gas receiving compartment, defined between plates 7 and 12, or between plates 8 and 13; column 2, lines 8-19) crossed in a fluid tight manner by a first series of mixer channels having a substantially constant diameter along their axial length (i.e., liquid downflow pipes 11), the upper part of the chamber forming a plate (i.e., plate 7 or 8) for retaining liquid above this plate, and a second series of conduits (i.e., risers 40) for injecting secondary gas from said chamber into the liquid on plate 7 or 8.

Pappas et al., however, is silent as to the mixer channels 11 being pierced with orifices in the upper portion that is immersed in the liquid.

Billingham et al. (FIG. 6) teaches the provision of orifices in the upper portion of a mixer channel (i.e., the weir which defines passage 622, "may have orifices in its wall to allow liquid to enter laterally and promote mixing," see column 6, line 50 to column 7, line 5). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide orifices in the upper portion of the mixer channels 11 in the apparatus of Pappas et al., on the basis of suitability for the intended use thereof, because the orifices allow for liquid to enter laterally into the mixer channels, thereby promoting mixing, as taught by Billingham et al.

In view of the newly added limitation, the modified apparatus of Pappas et al. structurally

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meets the claims because the “means for circulating liquid and gas phases through the granular bed or beds in a co-current descending manner” is not considered part of the “device for injecting a secondary gas”, as set forth by the preamble of the claim.

Regarding claim 27, Pappas discloses that a distance (see Figure) is provided between the bottom end of the tubes or mixer channels 11 and the upper surface of the lower bed (i.e., the upper surfaces of beds 22 or 23), and that a plurality of tubes or mixer channels 11 is provided for each plate 12, 13. However, Pappas et al. is silent as to the distance between the bottom end of tubes 11 and the upper surface of the lower beds 22, 23 being specifically 0 to 50 mm, with 0 excluded. Pappas et al. is further silent as to the density of conduits 11 being more than 80 per square meter. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select the recited distance and the recited density for the conduits 11 in the apparatus of Pappas et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because changes in size merely involves ordinary skill in the art, the duplication of parts merely involves ordinary skill in the art, and it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, *In re Aller*, 105 USPQ 233.

Response to Arguments

5. Applicant's arguments with respect to claims 25, 27 and 30 have been considered, but they are not persuasive. On page 7 (second paragraph) of the response, Applicants argue,

“... While the office action combines various features of the references, picking and choosing those which are necessary to allege obviousness of claim features, the only discussion of “motivation” to make such a selection in combination is... “the basis of suitability for the intended use thereof...”

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The Examiner respectfully disagrees and maintains that she has cited adequate motivation in her rejections. The Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation arises from the teaching that the provision of lateral orifices on a conduit allows for liquid to enter laterally into the conduit, which thereby promotes mixing (see Billingham et al., column 6, line 50 to column 7, line 5). In response to applicant's argument that the Examiner's conclusion of obviousness is based upon an improper "picking and choosing" of claim features, or an improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants further argue,

"... if one of ordinary skill of the art were to combine the disclosure of Billingham with that of Pappas, the result would be a replacement of downcomers (11) of Pappas by a central converging downcomer and a grid such as that (3) of Billingham, to achieve downstream liquid distribution..." (page 7, last paragraph).

The Examiner respectfully disagrees and maintains her rejection. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of

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the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In the instant case, Billingham was merely cited to illustrate that the provision of orifices on the lateral wall of a tube allows liquid to enter laterally into a tube, and to thereby promote mixing (see column 6, line 50 to column 7, line 5). The apparatus taught by Billingham was not meant to be bodily incorporated into the apparatus disclosed by Pappas et al.

Allowable Subject Matter

6. Claims 1, 17, 19, 21, 22 and 26 are allowable. Claim 18 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The prior art does not disclose or adequately teach the instantly claimed configuration of the device to be located between two successive upper and lower granular beds, wherein the device comprises, in particular, the claimed contact and distribution apparatuses in combination with the conduits (206) with plates (207) that traverse the device in a fluid tight manner, for preventing the flow of a liquid fraction through said conduits.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer A. Leung
August 2, 2006 *JAL*

Alexa Doroshenk Neckel
ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER